

Sources of Stressors among Physics Education Undergraduates of Chukwuemeka Odumegwu Ojukwu University

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Abstract. The study was aimed at examining the role of inadequate physics facilities/accommodation, socio-economic status and poor time management as stressors among Chukwuemeka Odumegwu University (COOU), Anambra State Physics Education undergraduates. The study was guided by five research questions. The survey design was adopted. All the physics Education undergraduates of COOU, Anambra State totalling forty students was used for the study. The researcher used questionnaire instrument targeted to physics Education students of COOU. The research questions were answered using percentages. It was found that low socio-economic status was the highest contributor of stress among COOU Physics Education undergraduates Anambra State with 80% of the respondents indicating that it was a major contributor of stress. It was recommended that counselling services should be rendered to Physics Education students with a view of helping them improve their socio-economic status by helping them getting vacation jobs in their institutions and other places and also helping them manage the time available to them effectively. Moreover conducive atmosphere for learning, adequate Physics facilities and well equipped medical units should be provided by the government and university authorities in order to reduce stress among physics Education undergraduates, so as to meet their academic challenges.

Keywords: Stress, stressors, inadequate physics facilities, laboratories, economic status and emotional problem.

I INTRODUCTION

Physics Education aims at promoting intellectual and calculative skills of the individual and his ability to use such skills, to create and manipulate material resources to create wealth, promote health and societal development. Okafor (2009) observes that physics Education aims at the following:

- Facilitate a transition for scientific concepts and techniques acquired in integrated science with physics;
- Provide students with basic knowledge in physics concept and principles through efficient selection of content and sequencing;
- Show progress in its link with industry, everyday life benefits and hazards; and show; physics in its inter-relationship with other subjects.
- Provide a course, which is complete for pupils not proceeding to higher education, while it is at the same time a reasonable adequate foundation for a post secondary physics course.

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However, when the student is burdened by stressors, these wonderful aims may be an illusion. Stress according to Oxford Advanced Learner's Dictionary (1995) means pressure, tension or worry resulting from problems in one's life while stressor means an environmental condition or influence of stress (ie causes stress for) an organism. Stress may be unavoidable in human existence. Stress is a part of everyday life, including that of students. However, it could be managed if certain steps are taken. Stress has to do with day to day events and how an individual reacts to them. Any alteration in an individual's life, whether pleasant, or unpleasant, usually, requires some kind of human readjustment. Alike (2011) opined that when this readjustment negatively affects the normal psychological or physiological well being of an individual, he or she experiences stress. Stress could arise as a result of physical exhaustion, anxiety, ill-health and financial problems.

Stress is a regular feature associated with students' life on campuses of Nigerian Universities.

This problem tends to undermine the educational achievement and by implication the economic growth and development of the country. The degrees of stress physics students undergo as a result of change in environment, hostel, access to computers, science equipments, laboratories, classroom accommodation, missing result scores, health problems, family problems and inability to manage time available to them would be overwhelming (Alike 2011). Consequently, Maisamari (1996) described stress as a state of discomfort, tension or emotional pain which arises when an individual is faced with situation which present a demand that is important for the individual to meet but for which his capacities and resources are inadequate, he contended further that cognitively, stress interferes with thinking, concentration and memory (Maisamari, 2002). He also observed that poor time management is a sort of stress. When students fail to manage the time available to them effectively, they may undergo some sort of stress. When it is time for examination, by staying awake all night, reading in order to cover the course outline. This may lead to break down their health condition prior to or during examination, thereby leading to academic underachievement.

Moderate stress motivates the individual to action necessary to adapt in rapidly changing world. When it comes to stress and its bad effect, it is seen as disabling, disorganising and disorienting. Woolfolk (2005) identified that behaviourally, stress is characterised by anxiety, anger, depression, intrinsic, thoughts/images, obsessions, altered motivation, impaired intellectual activities, aggression, substance abuse, avoidance, lack of concentration and loss of interest in physics education activities that were eagerly sought for. Also UNICEF (2004) reported that countries

like Japan and Malaysia made tremendous leap into economic and technological advancement because they focus on the development of their human resources, especially in physics, mathematics and technology, if Nigeria must borrow a leaf from these nations. Physics and technology education should occupy a position of pre eminence in national developmental projects.

Socio-economic status has been observed to be a form of stressor in the study of physics education. Sociologists define social class, or socio-economic status (SES) in terms of an individual's income, occupation, education and prestige in society, (Thomson & Hickey, 2005). Students from working class or lower-class background are less likely than middle class students to enter school knowing how to count, to name letters, to cut with scissors or name colours. They are less likely to perform better than children from middle-class homes (Natriello, 2002; Sirin, 2005). Equally Egbochukwu and Alike, (2008) found out that the socio-economic status of an individual exerts a lot of influence on the academic attainment of the individual. This implies that an undergraduate of Physics Education whose parental socio-economic status is low will find it difficult to manage stressors that he may likely encounter in the university due to the handicap posed by his socio-economic background. This is more apparent, as we have also many students on campus who are training themselves in the universities. In addition, Franklin (1998) found that individual who suffer extreme hunger for a long period of time due to poverty, experience a wide spread effect such as depression, poor concentration, hostile and irritable disposition. Leandro (2005) in Awake publication found that when faced with financial distress it affects one's mood.

Physics students can be stressed as a result of lack of financial backup especially as regards purchase of basic necessities. This may raise tension and stress and as a result affect their academic achievement.

Sources of Stress in Physics Education

Alike (2011) categorised major sources of stress in physics Education into physical, psychological and environmental stresses. Ikeotuonye (1993) also categorised stressors to include the following: physical and health problems, financial and social problems, sexual, psychological, moral, family, environmental and vocational problems. Onyemerekeyo (1996) also contended that modern day issues resulting from our lifestyle, tasks and challenges amongst others are all sources of stress. Above all, the sources of stress in physics education are the gate way by which the emotional, cognitive and physiological activity of the individual is disrupted. Understanding these stress sources, then possible interference to physics education students' well-being is important, since it is informative and educative.

Management of stress in physics education:

Neidharelt, Malcolm and Robert in Alike (2011:19), advanced for coping strategies in the management of stress, they include:

- Build up general health: through proper nutrition, rest, exercise and other positive health practices.

- Change the situation: this has to do with avoiding the source of stress.
- Change your mind: that is your perceptions of or thought about stressors.
- Change your body: this has to do with the ability to substitute relaxation responses for stress responses.

Edstrom (1993) opined that stress manifestations include the physical cognitive, emotional and behavioural dimensions. Excessive stress may cause physical and mental health problems, reduce students self esteem and may affect students academic achievement.

One of the objectives of the national policy on Education (FRN 2004) is inculcation of the right types of values and attitudes for the survival of the individual and the society at large. Irrespective of this noble objective, it appears that the stress which physics education undergraduates' face is on the increase. There is the need for universities to make adequate preparation at ensuring the provision of adequate laboratories. Computers physics equipment, conducive atmosphere for learners, development of a positive self image, self-direction and the acquisition skill in coping with stress, failure to ensure these issues are addressed may jeopardise physics education students' ambition and goals. The pressure of anxiety amongst physics

Education undergraduates may lead to despair and fear towards challenges that they may encounter. In universities and colleges stressors may take the form of unaccustomed activities. Sharing a room with a stranger makes demands on the student, a new form of academic activity is demanding, rushing to secure the use of computers and laboratories ahead of time, financial resources and health issues can be stressors. Physics Education Undergraduates of the universities of Chukwuemeka Odumegwu Ojukwu University (COOU) are faced with a lot of stress, which range from academic, physical, emotional, poor time management and socio-economic problems amongst others.

A. Statement of the Problem

Psychologists assert that stress is an inevitable aspect of human existence, therefore, there is the need to exercise some sort of control over it, in order to minimize its damaging effects especially as regards its impact on Physics Education undergraduates. The advancement of any nation has to do with her human resources, UNICEF (2004). Therefore, it becomes imperative that efforts should be made to reduce stress among Physics Education students who may contribute to the future technological growth of the country.

The Physics Education undergraduates in the Chukwuemeka Odumegwu Ojukwu University experience a lot of discomfort ranging from a change of environment, academic pressures, inadequate laboratories, computers, accommodation, poor time management, health issues, poor socio-economic status and transportation. There is need to ensure that these issues are addressed by the various university authorities because failure to ensure that this is done may jeopardize Physics Education Undergraduates' ambition and goals. Without doubt, the problem of inadequate laboratories and accommodation in our campuses is a source of stress not only to students but

to their parents. Usually in the Chukwuemeka Odumegwu Ojukwu University, priority is given to first year and final years students in term accommodation. Chronic stressors on campuses expose Physics Education Undergraduates to unwanted behavioural tendencies. When stress becomes unbearable to an individual it may lead to distress, which may cause some damage to the entire well-being of the individual. Therefore, a study of this nature is imperative in Nigerian universities in order to determine the sources of stress and strategies that should be adopted to eliminate stressors among Physics Education Undergraduates, in order to build a strong egalitarian and virile nation.

B Purpose of study

The main purpose of this study was to find out the sources of stress among Chukwuemeka Odumegwu Ojukwu University Physics Education undergraduates and proffer strategies that could be adopted in order to minimize or eliminate stress on university campuses.

C Research questions

The following research questions were posed to guide the study.

1. Does inadequate science facilities/accommodation constitute a source of stress to Physics education Undergraduates in Chukwuemeka Odumegwu Ojukwu University, Anambra State?
2. To what extent will poor health condition be a source of stress to Physics Education undergraduates in Chukwuemeka Odumegwu Ojukwu University, Anambra State?
3. Is emotional problem a source of stress to Chukwuemeka Odumegwu Ojukwu University, Anambra State Physics Education Undergraduates?
4. Is low socio-economic status a source of stress to Chukwuemeka Odumegwu Ojukwu University, Anambra State Physics Education Undergraduates?
5. To what extent will poor time management constitute a source of stress to Chukwuemeka Odumegwu Ojukwu University, Anambra State.

II METHODOLOGY

The survey method was adopted for this study. All the Physics Education Undergraduates were used for the study, from one to final year totaling forty students. All the Physics Education students were used because they are not so large, they understand the system and also are in better position to express their experiences.

A. Instrument

The instrument used for this study was questionnaires. The questionnaire was designed based on the research questions for the purpose of this study. The instrument was made up of twenty items. All items represent statement to which they responded to on a 4 point modified Likert scale, ranging from strongly agree, agree, disagree and strongly disagree.

B. Validations of the instrument

The questionnaire was face validated by two specialists in Chukwuemeka Odumegwu Ojukwu University (COOU) and two experts in industrial physics in the Chukwuemeka Odumegwu Ojukwu University, Anambra State. The specialist approved the face validity of the instrument and endorsed the questionnaire as having content validity after removing items that were found to be less importance to the study.

C. Reliability of the Instrument

The reliability of the instrument was determined by using the test retest method. The questionnaire was administered to fifteen students in selected departments. The two weeks interval was to ensure that respondents do not remember exactly their previous responses and that the items being measured are relatively stable among respondents in order to show consistency in scores in both tests. The scores obtained were correlated and the reliability co-efficient of 0.89 was obtained, thus indicating that the instrument was adequate for the study.

D. Method of Data Collection

The researcher with the aid of two research assistants administered instruments so to ensure orderliness and avoidance of attrition instruction on how to fill the questionnaire followed their distributors. The forty respondents filled the questionnaire immediately and returned them on the spot. The questionnaires contained strongly agree, agree, disagree and strongly disagree. The data generated from the respondents were analyzed by testing the five research questions formulated for the study. The statistical method employed was simple percentage.

III RESULTS

A. Research Question 1

Does inadequate science facilities/accommodation constitute a source of a stress to Physics Education Undergraduates of Chukwuemeka Odumegwu Ojukwu University, Anambra State.

Table 1: Inadequate science condition

Variable	No of respondent	Strongly agree	Agree	Disagree	Strongly disagree	%
Inadequate facilities/accommodation	40	10	14	9	7	60

Table 1 shows that out of 40 respondents, 10 and 14 students responded to strongly agree and agree respectively while 9 and 7 responded disagree and strongly disagree. When the mean percentage was computed, it was 60%. Thus implies that inadequate science facilities/accommodation is a source of stressor to Physics Education Undergraduates of Chukwuemeka Odumegwu Ojukwu University, Anambra State.

B. Research Question 2

To what extent will poor health condition be a source of stress Physics Education Undergraduates of University of Chukwuemeka Odumegwu Ojukwu University, Anambra State?

Table 2: Poor health condition

Variable	No of respondents	Strongly agree	Agree	Disagree	Strongly disagree	%
Poor health	40	18	22	7	3	75.0

Table 2 showed that 8 and 22 respondents strongly agreed and agreed respectively that poor health is a source of stressor among Physics Education Undergraduate and this number of respondents constitute 75.0% of the respondents. This implies that poor health to a great extent is a source of stressor among Physics education students of Chukwuemeka Odumegwu Ojukwu University, Anambra State.

C. Research Question 3

Is emotional problem a source of stress to physics education undergraduates of Chukwuemeka Odumegwu Ojukwu University?

Table 3: Emotional problem

Variable	No of respondents	Strongly agree	Agree	Disagree	Strongly disagree	%
Poor health	40	18	22	7	3	75.0

Table 3 showed that 8 and 22 respondents strongly agreed and agreed respectively that emotional problem is a source of stressor among Chukwuemeka Odumegwu Ojukwu University Anambra State, physics education undergraduates. The mean percentage of the figure above was computed to be 75.0%. This implies that emotional stressor is a problem among physics education undergraduates of Chukwuemeka Odumegwu Ojukwu University Anambra State.

D. Research Question 4

Is low socio-economic status a source of stress to Chukwuemeka Odumegwu Ojukwu University, Anambra State, physics education undergraduates?

Table 4: Socio-economic status

Variable	No of respondents	Strongly agree	Agree	Disagree	Strongly disagree	%
Poor health	40	7	25	5	3	80

Table 4 showed that 7 and 25 respondents strongly agreed and agreed respectively that low socio-economic status of the respondents is a strong determinant of stress among physics education undergraduates. When the mean percentage was computed it was found to be 80%. This

implies that low socio-economic status of a family to a large extent is a source of stressor among physics education undergraduates of Chukwuemeka Odumegwu Ojukwu University, Anambra State.

E. Research Question 5

To what extent will poor time management constitute a source of stress to physics education undergraduates of Chukwuemeka Odumegwu Ojukwu University, Anambra State?

Table 5: Poor time management

Variable	No of respondents	Strongly agree	Agree	Disagree	Strongly disagree	%
Poor time management	40	10	20	7	3	75

Table 5 showed that 10 and 20 respondents strongly agreed and agreed respectively that poor time management constitute a source of stress to physics education undergraduates. When the mean percentage was computed, it was found to be 75%, thus implies that poor time management is a source of stressor among physics education undergraduates of Chukwuemeka Odumegwu Ojukwu University, Anambra State.

IV. DISCUSSION

From the analysis and interpretation of data, it was found out that inadequate science facilities/accommodation is a source of stress to physics education undergraduates. This finding is in line with the Alike (2011) who found that modern day challenges, inadequate laboratories, computers and accommodation inclusive constitutes stressor in our campuses. When physics education undergraduates are faced with a challenge such as inadequate facilities like laboratories, computers, and accommodation, their academic performance may be affected. When this happens, the observation of Maisamari (2002) comes into play, he contended that cognitively, stress interfaces with thinking, concentration and memory; this may lead to poor academic achievement.

The study also showed that poor health condition could be a source of physics education undergraduates. This finding is in agreement with the observation of Ikeotunye (1993) who noted that physical and health problems constitute sources of stress among individuals. This study also showed that socio-economic status could be a source of stressor among physics education undergraduates, thus finding is in line with the observation of Alike (2011) who described family problems as a source of stressor. The finding is also in line with the observation of Maisamari (1996) when he described stress as a state of discomfort, tension or emotional pain, which arises when an individual if faced with situations which present a demand that's important for the individual to meet but for which his capacities and resources are inadequate. It is also in line with the findings of Franklin (1998) who found that individuals who suffer extreme hunger as a result of

poverty for a long period of time experience a wide spread affect such depression, poor concentration, hostility and irritable disposition, thus on the long run may-effect academic achievement. This study also showed that emotional problems could be a source of stress among physics education undergraduates. This finding is in line with the assertion of Woolfolk (1995) who noted that behaviourally, stress is characterized by anxiety, anger, depression, obsession, altered motivation, impaired intellectual activities, and lack of concentration and loss of interest amongst others.

Moreover, the study showed that poor time management is the highest contributor of stress among physics education undergraduates. This finding is in line with that of Maisamari (2002) who identified poor time management as a source of stress. This is so because students who fail to manage their time effectively may express some form of stress especially when it is time for test and examination, they find themselves reading all night, in order to cover the course outline, this more often than not gets them stressed, some fall sick and are rushed to the hospital or the university medical centre. This is invariably may lead to poor academic achievement.

V. CONCLUSION

The conclusion drawn from this study is that inadequate laboratories, computers, physics equipments, students' hostel and lecture hall accommodation, poor health condition, emotional problem, low socio-economic status and poor time management constitute stressors to physics education undergraduates of Chukwuemeka Odumegwu Ojukwu University, Anambra State. However, the study showed that low socio-economic status is the highest contributor to stress among physics education undergraduates because 80% of the respondents indicated that poor time management is a major source of stress among physics education undergraduates.

Recommendations

The stake holders of Education, the Federal Government and State Government agencies such as Education trust fund and the University authorities should ensure that adequate science facilities/accommodation are provided for students in university campuses. Health workers should visit the university campuses from time to time so as to ensure that adequate healthy conditions prevail on university campuses. University Health/Medical Centers should be well funded and equipped. Guidance and Counselling services should be provided in order to assist in counseling students with emotional problems and also in providing guidance and counselling services on effective time management to our young undergraduates, especially those in physics education.

Ministry of Education agencies, non-governmental agencies etc. should collaborate among themselves in providing incoming-generating ventures, factories, industries that will serve as a boost to availability of vacation jobs in order to improve the socio-economic status of students who need money in order to meet their social and educational challenges while in the university.

University guidance counsellors should identify indigent physics education undergraduate and help them negotiate

some form of financial assistance through scholarship for them or work study programs on campuses. Counselling services should be emphatically rendered to physics education undergraduates and how to effectively manage their time in order to improve on their academic achievement, resolve emotional problems and adjust effectively thereby develop their potential to improve on their academic achievement and contribute towards national development. They should adequately render their counselling services to physics education undergraduates in order to help them manage their stress so as to help them develop functional education.

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